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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,027	01/24/2002	Friedrich Jonas	Mo6935/LeA 34,765	3582

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EXAMINER

METZMAIER, DANIEL S

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 11/20/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

CLO?

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/057,027	JONAS ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Daniel S. Metzmaier	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 7 and 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All   b) ☐ Some   c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 012002                      6) ☐ Other:

### **DETAILED ACTION**

Claims 1-8 are pending. This Action is responsive to the election filed with a two month extension of time on September 15, 2003.

#### ***Election/Restrictions***

1. Applicant's election with traverse of Group I and the species wherein R1 and R2 are each hydrogen in Paper filed September 15, 2003 is acknowledged. The traversal is on the ground(s) that a search of the claims of Group II would involve the search of the claims of Group I. Applicants concluded based on said traversal that it is more expedient to search and examine all the claims at the same time. This is not found persuasive because of the following reasons.

(1) Assuming arguendo applicants' statement "that a search of the claims of Group II would involve the search of the claims of Group I" were correct, the corollary does not equally follow, which is, "a search of the claims of Group I would involve the search of the claims of Group II". Applicants have elected Group I.

(2) Applicants asserted basis for the traversal is itself a conclusion that is not supported by facts. Since Group II defines a final layered product, the dispersion as claimed in claim 1 no longer exist as a dispersion. Examiner made said point in the original restriction. There is no claimed nexus nor disclosed indication that the arrangement of claims 7 and 8 could not be made by other compositions that do not have the elements of claim 1, because all the elements of claim 1 would not be required in the final layered product.

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(3) The compositions of Group I may clearly be used for utilities other than an "electroluminescent arrangement", such as a coating composition for imparting antistatic properties to plastics (see Krafft et al, US 5,370,981) or in making electrodes in various electrical and semiconductive devices (see Louwet et al, US 6,632,472).

The requirement is still deemed proper and is therefore made FINAL.

***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Specification***

3. The specification refers to several prior art references as source materials in making the instant dispersions. It is the examiner's position that one having ordinary skill in the art would have known how to make the 3,4-polyalkylenedioxythiophenes disclosed. To the extent applicants differ in this opinion, they should set forth their position.

The examples refer to example 2 from EP-A 991 303. Said reference example is in other than English and any comparative results in the example have been given no patentable weight. Likewise, no weight is given to reference on page 6, lines 20-21 to the level of impurities.

***Claim interpretation***

4. Claimed ranges set forth as preferred ranges have been given no patentable weight and the claim reads on the broadest range set forth.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for aqueous or aqueous/alcohol dispersions (page 5, line 29, to page 6, line 15), does not reasonably provide enablement for all dispersions. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. Applicants have not established that the dispersions would be stable enough for the utility set forth if employing solvents other than the water or water/alcohol mixtures. Furthermore, the claims only require the two components, polyanions and the cationic 3,4-polyalkylenedioxythiophenes. It is unclear where applicants set forth a two component dispersion, ie, one dispersed in the other.

The dispersion employs a combination of polyanionic polymers (eg, polystyrene sulfonates) and cationic 3,4-polyalkylenedioxythiophenes. Each of said components has a significant ionic character, which would be expected to effect the dispersibility of said polymers in the various possible solvent systems and applicants make no disclosure for further stabilization for the diverse solvent systems that the claims may read. The claims are silent regarding any type of solvent system.

7. Claim 4 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for "R<sup>1</sup> and R<sup>2</sup> independently of one another are H,

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an alkyl radical having 1 to 20 carbon atoms, an aryl radical having from 6 to 14 carbon atoms or  $-\text{CH}_2-\text{OR}^3$ , where  $\text{R}^3$  is H, alkyl or  $-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{SO}_3\text{H}$ ", does not reasonably provide enablement for " $\text{R}^1$  and  $\text{R}^2$  independently of one another are H, an optionally substituted alkyl radical having 1 to 20 carbon atoms, an aryl radical having from 6 to 14 carbon atoms or  $-\text{CH}_2-\text{OR}^3$ , where  $\text{R}^3$  is H, alkyl or  $-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{SO}_3\text{H}$ ". The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. The claims and the specification fail to set forth any definition for the skilled artisan to interpret "substituted", which modifies alkyl radical. It would be an undue burden for the skilled artisan to determine all substituents that may function in applicant's invention.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims define a dispersion comprising two components and a particle size. It is unclear which component is dispersed in the other or some unspecified dispersing medium. It is unclear what the particle size represents, eg, the polyanions, the cationic 3,4-polyalkylenedioxythiophenes, or a material dispersed therein.

The particle size sets forth 90% without setting forth whether the percentage is weight or volume.

In claim 3, the resistivity of the coatings is indefinite. The resistivity is a measured value of a product derived from the claimed dispersions but no method is set forth for how said dispersion was coated or said resistivity was measured. Both the coating and the measurement may significantly effect the resistivity, such as the thickness of the coating or the impurities among other parameters. See Jonas et al, US 5,766,515, column 2, line 66, to column 3, line 4, regarding the dependence of the resistivity on the thickness of the coating.

In claim 4,  $R^1$  and  $R^2$  are indefinite because it is unclear with what the "optionally substituted alkyl radical having 1 to 20 carbon atoms" is optionally substituted. It is unclear how one skilled in the art would determine the metes and bounds of said undefined claim limitation.

In claim 6, it is unclear what the ratio is based, eg, weight, equivalent weight or volume.

Claims 1-6 are indefinite for the limitations set forth therein of "at least about" in defining ranges within the claimed compositions. Attention is directed to MPEP

2173.05.

"However, the court held that claims reciting "at least about" were invalid for indefiniteness where there was close prior art and there was nothing in the specification, prosecution history, or the prior art to provide any indication as to what range of specific activity is covered by the term "about." Amgen, Inc. v. Chugai Pharmaceutical Co., 927 F.2d 1200, 18 USPQ2d 1016 (Fed. Cir. 1991)."

### ***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 1-2 and 4-5 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Louwet et al, US 6,632,472. Louwet et al (examples) discloses aqueous dispersions of poly(3,4-ethylenedioxythiophene) [PEDOT] and polystyrene sulphonate [PSS] having a mean particle size of 50 nm and Table 1 sets forth representative dispersions. Several of the



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examples having 90% by weight of the particles having sizes less than 58 nm.

Applicant's claims set forth dispersions having "at least about 90 %" and a size of "less than about 50 nm" or "less than about 40 nm" (emphasis added). Since applicants modify both the percentage and size of particles by "about", the disclosure in Louwet et al reads on the instant claims.

To the extent the Louwet et al differs from the claims in the particle size distribution, it would have been obvious to one of ordinary skill in the art at the time of applicants' invention to vary the degree of homogenization and/or microfluidization clearly contemplated in the Louwet et al reference. Louwet et al (examples, particularly column 17, lines 1-16) discloses treatment of the dispersions with a homogenizer and a microfluidizer. It would have been obvious to one of ordinary skill in the art at the time of applicants' invention to vary the degree of homogenization and/or microfluidization for the advantage of obtaining a more homogeneous and stable compositions and coating resulting therefrom.

14. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bayer AG, DE 198 41 803 A1, as evidenced by Jonas et al, US 6,391,481; optionally in view of Krafft et al, US 5,370,981. Jonas et al (item 30 on the U.S. Patent face) cited DE 198 41 803 as the foreign priority document. DE 198 41 803 has a publication date of March 2000, more than 12 months prior to the instant filing date. Jonas et al is used as an English language equivalent of the DE 198 41 803 reference and said references are considered to contain the same disclosures or substantially the same disclosures.

Jonas et al is referred to for citations.

Bayer Ag and Jonas et al differ from the claims in the particle size and the resistivity.

Bayer Ag and Jonas et al (examples and column 2, lines 7 et seq) disclose 3,4-polyalkylenedioxythiophene/polystyrene sulfonate dispersions (PEDT/PSS, wt ratio = 1:2.5, 1:4, and 1:8). Bayer Ag and Jonas et al column 2, lines 7 et seq) teaches the very fine particle size of the dispersions improve the lifetime of the devices employing said materials therein. Bayer Ag and Jonas et al further teach that by varying the specific ratio of the conductive polycations (PEDT) to the nonconductive counterions or nonionic binders (PSS), the occurrence of short circuits or crosstalk can be significantly reduced.

It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to vary the particle size of the dispersion for increased particle packing at the coating surface and increased dispersion homogeneity. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to vary the ratio of the PEDT/PSS ratio for the advantage of varying the resistivity and conductivity of the layered formed therefrom.

The coating resistivity of claim 3 would have been an expected result of varying the PEDT/PSS ratio due to the decrease of the conductive polycations and increase of the nonconductive polyanions clearly contemplated in the reference.

Furthermore, Krafft et al (examples) exemplifies PEDT/PSS dispersions and teaches (column 3, lines 11-18) teaches the particle sizes of the dispersions may range from 5 nm to 100 nm. These references are combinable because they teach

PEDT/PSS dispersions. It would have been obvious to one of ordinary skill in the art at the time of applicants' invention to vary the particle size of said dispersions within the conventional size ranges as shown Krafft et al reference for the advantage of stability and the expectation of a more homogeneous final product.

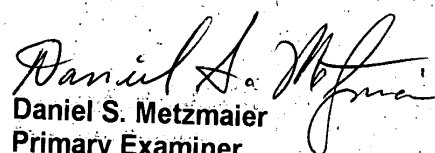
**Conclusion**

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (703) 308-0451. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson can be reached on (703) 308-2340. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
Daniel S. Metzmaier  
Primary Examiner  
Art Unit 1712

DSM